Prokhorenko O. V., Candidate of Economic Sciences,
National Technical University
«Kharkiv Polytechnic Institute»
Kharkiv, Ukraine

ASSESSMENT OF THE EFFICIENCY OF OUTSOURCING AT INDUSTRIAL ENTERPRISES

Any organization is always faced with a choice between different forms of providing resources for ongoing processes. Therefore, decision making regarding self-fulfillment or outsourcing a particular business process depends of a number of specific conditions. Under the outsourcing we will understand contract based transferring of some business functions or business process to the specialized outside company in terms of economic feasibility [1].

The most famous method for assessing economic feasibility is the principle «make or buy» [2] using margin analysis methods.

$$b_1 x = a + b_2 x \quad (1)$$

where b1, b2 are respectively the cost of the element in the purchase and the specific variable cost of the element manufacturing;

a is fixed costs;

x is the number of elements.

The solution consists of finding such an amount of elements, when the manufacturing cost equals the cost of purchased elements.

This approach is simple and obvious, but it does not takes into account the strategic direction of the enterprise, the company positioning in the market, the qualitative parameters of the organization's products, etc. A decision to outsource, based solely on a comparison of costs in self-manufacturing and the acquisition, is justified only if the goal of outsourcing is purely cost reduction. Such a method can lead to a negative value of calculation result and to the rejection of outsourcing. However, according to the aim pursued, outsourcing can lead to an improvement in the quality of the business process result, the release of certain assets and the possibility of their more efficient use, increase of orders, etc. Therefore, these opportunities should be taken into account as part of the project's cash flows. Thus, the project should be considered within the entire organization as a socio-economic system.

Indicators, based on the difference or ratio of positive and negative cash flows, such as net present value (NPV) and profitability index (PI), are usually determined for the evaluation of the efficiency of any project.

$$NPV = \sum_{t=0}^{N} \frac{CF_t}{(1+i)^t} \quad (2)$$

$$PI = \sum_{n=0}^{N} \frac{NCF_t}{I} \text{ або } PI = \sum_{n=0}^{N} \frac{CF_{in}}{(1+r)^n} / \sum_{m=0}^{M} \frac{CF_{out}}{(1+r)^m} \quad (3)$$

where CFin and CFout are respectively income (revenue) and outcome (expenditure) cash flow;

r is discount rate;

n,m are numbers of periods.

To calculate the NPV, it is necessary to determine the expenditure and revenue components that will have a place in case of constructing a business process on the basis of outsourcing [3].

Expenditures of the project include the following elements.

1. Transaction costs for information seeking, negotiation with the counterparty and an agreement achievement (Tr);

2. Costs for adapting the organization to new relationships, i.e., dismantling or re-equipment, retraining of employees, etc. (A);

3. Expenses for direct payment for outsourcer services (Ba);

4. Expenses on maintenance of contractual relations (Bc).

The first two elements of expenditure are one-off, so they can be considered as investment costs. The last two ones are permanent, that is, they operate during the period of outsourcing relations.

Revenue of the project can be represented by the following components.

The part of the cost for business-process self-fulfillment has been released in case of outsourcing. This component in turn consists of:

operating costs (Bc), such as salaries; depreciation of equipment; material costs; other operating costs.

costs is released from defective products or unfulfilled orders (Bb).

2. Additional income of organization (D) due to:

– increase in production and/or sales of main or new products;

– disposal of the released property (the liquidation cost of equipment, rent, etc.);

– outsourcer's activities in the case of a subsidiary or equity participation.

The use of such component expenditures and revenues to determine the forecasted economic effect and efficiency of outsourcing according to the formulas 2 and 3 respectively leads to their appearance (4 and 5, respectively):

$$E = \sum_{n=0}^{N} \frac{B_f + B_b + D - B_a - B_c}{(1+r)^n} - Tr - A, \quad (4)$$

$$e = \frac{\sum_{n=0}^{N} \frac{B_f + B_b + D}{(1+r)^n}}{\sum_{m=0}^{M} \frac{B_a + B_c + Tr + A}{(1+r)^m}} \quad (5)$$

The final decision should be taken according to criterion of maximization E and e, under the constraints $E \geq 0$ and $e \geq 1$.

To monitor the ongoing of the outsourcing relationships such provisions should be taken into account.

Set the size of the acceptable deviation of the actual value of the result Ea from the planned Ep;

In the case of factor analysis of the deviation, the following positions should be taken into account:

– Tr and A are fixed factors, so they cannot change;

– Bf and Bb are released amount of expenses at the beginning, that is, they are also cannot change; only the correction for inflation or for any objective increase of the price is possible.

Thus, Ba, Bc, D are variable factors.

If the deviation of Ea from the planned Ep occurred as a result of the actions of the outsourcer (Ba, Bc), it indicates his (outsourcer's) dishonesty or unprofessionalism as a counterparty.

If the deviation occurred due to change in D, then, depending on the type of outsourcing, the cause may be the actions of both the customer and the outsourcer.

In the first case, the deviation has been due to:

– the released assets were not sold or leased, therefore planned revenue was not received;

– having given one business-process in outsourcing, the released assets were not directed to another business-process, so, concentration of own efforts of customer did not take place, and thus did not increase the volume of activity.

In the second case, the reasons for the deviation:

– established subsidiary company does not find additional orders and no additional income is received;

– improving the quality of the results of the business-process did not lead to an increase in sales (or the corresponding increase in prices was not justified, or the consumer does not notice improvement in quality).

Both cases indicate mistakes in planning or inadequate execution of the process, so, the customer should return to the assessment of forecasted efficiency.

References:

1. Heywood G. B. Autsorsing: v poiskah konkurentnyh preimushhestv [Outsourcing. In searches of competitive advantages] Moscow.Vil'jams Publ. 2002. 176 p.

2. Savitskaya G. V. Ekonomicheskiy analiz: ucheb. [Economic Analysis: Textbook] Moscow Novoye znaniye Publ. 2004. 640 p.

3. Brin P.V., Prokhorenko O. V. (2016) Kompleksnyy pidkhid do pryynyattya rishennya shchodo vprovadzhennya aut·sorsynhu na pidpryyemstvi [Integrated Approach to Decision-Making on the Implementation of Outsourcing at the Enterprise] Ekonomika ta derzhava. Seriya: Ekonomichna nauka. [Economy and the State. Series: Economic Science] 2016. № 8 p. 48-53.